DREDGE 55
Fukutoku
Smt.

AMPLE ID	Mn CHEM	Pt & Au	REE	Si Chem	P.Sect.	35mm Pho	Archive	Paleo					
D55-1													
D55-2													
D55-3	Bulk	Bulk	Bulk										
D55-4	Bulk												
D55-5													
D55-6													

SAMPLE DESCRIPTION

DREDGE 55
Fukutoku
Smt.

Cruise Id: TT192 Size: 19x14x5 cm Location: SW F[illegible]

Sample Id: D55-1 Weight: 2 kg Depth: [illegible]

Mn Crust Description

Surface Texture: Smooth Flattened Botryoidal

Mn Crust Thickness:
Min:_____ Max:_____ Ave:_____

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				

Note Strange Dendritic Texture

Mariana Islands

D55-1

Comments and XRD Mineralogy:

Very Strange texture. Dendrites of Mn in a sand: large (6 cm) clasts of volcanics incorporated. Thin (2 mm) layers of hydrogenetic Mn on top, and thick (5 mm) layer of dense light gray hydrothermal Mn on the bottom.

The texture looks as if capillary action were drawing Mn up through the sand

Small (<1 mm) xtals; black incorporated in Mn probably from volcanic clasts

Substrate Description

Rock Type: Sandstone ?

Description:

ANALYSES

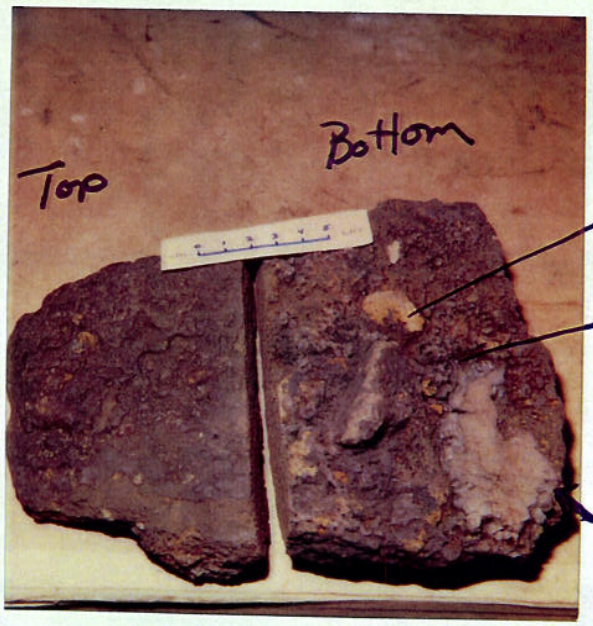
DPTS

D55-1A XRD - of dense gray strata form Mn from bottom of sample

D55-1B XRD Through Sample

TSM

TT192
D55-1



Altered Volcanic Clast

Open dendritic Texture

Thick patches of Dense light gray hydrothermal Mn

Mariana Islands
D55-1

SAMPLE DESCRIPTION

Cruise Id: TT192 Size: 17.5×9×5 Location: SW Fukutoku Cr

Sample Id: D55-2 Weight: 2 kg Depth: 1040 - 1480 M

Mn Crust Description

Surface Texture: Smooth & Botryoidal

Mn Crust Thickness:

Min:_____ Max:_____ Ave:_____

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				

Mariana Islands

D55-2

Comments and XRD Mineralogy:

ANALYSES

Substrate Description

Rock Type: Manganiferous Sandstones and Hydrothermal Mn

Description:

Hydrothermal Mn, has Sandstone & Volcanic clasts incorporated, Mn has some suggestion of layering, but main texture is dendritic

TSM

Sample Description

Cruise I.D: ~~L5-83-HW~~ Mariana Is.

Sample I.D: Sta: D 55-3

Location: SW Fukutoku Sm

4 pieces: 2 are slabbed + both ½'s are pieced. The other 2 pieces are slabbed pieces that don't seem to match each other.

Size: _____ Weight: 727 gm total

From 11x9x3.5cm (biggest piece) to 5x3x3cm (smallest unmatched piece)

Depth: 1070-1780m

Mn crust thickness:

Total: min: _____ max: _____ ave: _____

Inner crust: min: _____ max: _____ ave: _____

Outer crust: min: _____ max: _____ ave: _____

Surface texture: _____

Internal structure: _____

layered: _____
laminated: _____
massive: _____
porous: _____
dendritic: _____
other: _____

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits: _____

Substratum:

Rock type: Manganiferous Sandstones

Description:

Mn sandstones w/ a few larger clasts some layering of hydrothermal Mn, but no consistent layer. Mn mostly cementing sandstone.

Mineralogy (XRD): _____

Mariana Islands
D55-3

Analyses and subsamples:

analysis:	analyst:
Chemistry: from smallest unmatched piece, bulk crust sample for "Manheim" + Pt+Au + REE	L. Morgenson
XRD: bulk crust sample from piece sent for chem (D55-3-I)	

Sample Description

Cruise I.D: ~~15-83-HW~~ Mariana Is.

Sample I.D: Sta: D55-4

Location: SW Fukatoka Smt

11 pieces all slabbed

Size: in ½ Weight: 1,426 grms total (dry)

From 12.5x10x5.5cm to 6x5.5x1.0 cm (smallest) (biggest)

Depth: 1070-1780 m

Mn crust thickness:

Total: min: max: ave:

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture:

Internal structure:

layered:
laminated:
massive:
porous:
dendritic:
other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type:

Description:

Various pieces of Mn Sandstone & Hydrothermal Mn. Some of the Mn Sandstones have hydrothermal layers

Mineralogy (XRD):

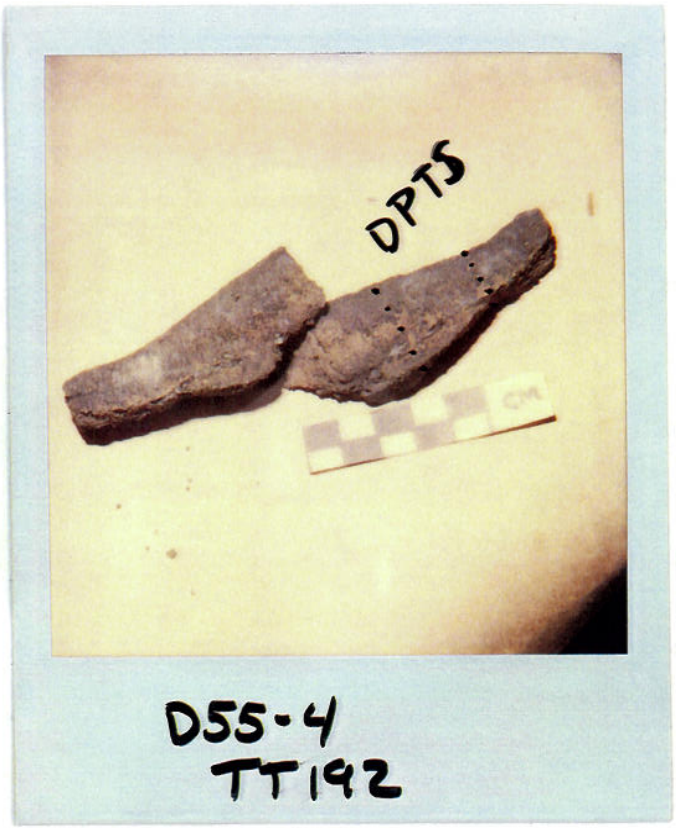
Mariana Islands

D55-4

More samples than pictured

Analyses and subsamples:

analysis:	analyst:
Chemistry: Bulk crust "manheim" of biggest piece which is also the most permissible	L. Morgan [illegible]
XRD: bulk crust from piece sent for them (D55-4-I)	
D55-4 R1 submitted for Hg Chemistry	
DPTS	



This sample has a column of Mn
that go right through sand layers
(foraminiferal) sand

Mariana Islands

Cruise I.D: TT-192

Sample Description

Sample I.D: Sta: D-55-6

Location: SW Fukutoku Sm

Size: [illegible] Weight: 127.8 (dry)

Mn crust thickness:

Total: min: max: ave:

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture:

Internal structure:

layered: ✓

laminated:

massive:

porous:

dendritic:

other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mn sandstones

Description: One with well preserved shell [illegible]. 2 have distinct Mn layers, dense Mn. Ss in medium to fine grained.

Mineralogy (XRD):

Mariana Is TT192

D55-6

Analyses and subsamples:

analysis:

analyst:

JP13
D55-6
TT192